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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,093	02/20/2004	Wounghang Park	226251	6898

23460 7590 03/28/2005

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TWO PRUDENTIAL PLAZA, SUITE 4900  
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CHICAGO, IL 60601-6780

EXAMINER
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LE, HOA T

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/784,093

Applicant(s)

PARK ET AL.

Examiner

H. T. Le

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7,36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,36 and 37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. Claims 1-7, 36 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishio et al (US 5,856,009) as applied to the rejection of claims 1-7 set forth in the last office action and further discussed below.
2. Claims 1, 2 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Ranby et al (US 4,396,863) as set forth in the last office action and further discussed below.
3. Claims 1, 2 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Okada et al (US 5,523,018) as set forth in the last office action and further discussed below.
4. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ranby et al (US 4,396,863) as set forth in the last office action and further discussed below.

### *Response to Arguments*

5. Applicants argued that the coating taught in the prior art references is not continuous and does not comprise a crystalline rare earth oxide as required in features amended in the instant claims.

With regard to the Nishio patent: Throughout the patent, the coating is characterized as a "coating film" which suggests that the coating is continuous. An annealing step is applied after the phosphor is coated with a coating at a temperature from 600-900 °C (Nishio, col. 5, lines 4-7 and 12-15). This annealing temperature is high enough to crystallize the oxide coating, and thus the coating comprises crystalline oxide including yttrium oxide.

With regard to the Ranby patent: Applicants argued that precipitation cannot form a continuous coating because of the low concentration of metal oxide. If the coating is not continuous, there would not have been significant improvement in brightness retention of the phosphor as shown in the patent (see Tables). The coated phosphor is then subject to heat treatment at 200-800 °C which is high enough to cause crystallization of the rare earth oxide contained in the coating. Thus, the coating taught by Ranby comprises crystalline rare earth oxide.

With regard to the Okada reference: The coating is described as a “film” (col. 4, lines 25-28) and is “uniform” (col. 4, lines 20-22). Therefore, the coating is definitely continuous. After coating, the coated phosphor is subject to “baking” at 450-600 °C (col. 7, lines 29-33) which is high enough to crystallize the oxide coating. Therefore, the coating comprises crystalline rare earth oxide.

6. It's noticed that Applicants appear to equate “continuous coating” to “completely covering” the substrate surface. A continuous coating is broader than that. If the coating covers an area of the substrate without uncoated spots, it's considered continuous.

7. Applicant's arguments filed January 7, 2005 have been fully considered but they are not persuasive for reasons set forth above. However, the claims as amended have overcome the rejections based on the Flaherty and Fujino patents. Therefore, rejections based on those patents have been withdrawn.

*Conclusion*

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. T. Le whose telephone number is 571-272-1511. The examiner can normally be reached on 10:00 a.m. to 6:30 p.m., Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



H. T. Le  
Primary Examiner  
Art Unit 1773